


2002 3rd QUARTER GROUNDWATER MONITORING REPORT

FOR


COPY

FORMER ANGELES CHEMICAL
COMPANY FACILITY
8915 SORENSEN AVENUE
SANTA FE SPRINGS, CALIFORNIA

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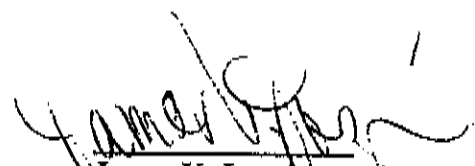

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1.0) INTRODUCTION

Blakely Environmental Investigations, Inc. (BEII) was contracted by Greve Financial Services ((310) 753-5770) to perform quarterly groundwater monitoring at the former Angeles Chemical Company, Inc. facility located at 8915 Sorensen Avenue, Santa Fe Springs, California (See Figure 1, Site Location Map). The quarterly groundwater monitoring was requested by the Department of Toxic Substances Control (DTSC) correspondence dated September 18, 2001. This report presents the results of the 2002 3rd quarter monitoring episode performed on October 7, 2002.

2.0) SITE LOCATION AND HISTORY

The site is approximately 1.8 acres in size and completely fenced. The site is bound by Sorensen Avenue on the east, Air Liquide Corporation to the north and northwest, Plastall Metals Corporation to the north, and a Southern Pacific Railroad easement and McKesson Chemical Company to the south.

The property was owned by Southern Pacific Transportation Company and was not developed until 1976.

The Angeles Chemical Company has operated as a chemical repackaging facility since 1976. A total of thirty-four (34) underground storage tanks (USTs) existed beneath the site. Two (2) USTs, one gasoline and one diesel, and sixteen (16) chemical USTs were excavated and removed under the oversight of the Santa Fe Springs Fire Department. All 16 remaining chemical USTs were decommissioned in place and slurry filled.

In January 1990, SCS Engineers, Inc. (SCS) conducted a site investigation. SCS advanced eight borings from 5' below grade (bg) to 50' bg. Soil samples collected and analyzed identified benzene, 1,1-Dichloroethane (1,1-DCA), 1,1-Dichloroethene (1,1-DCE), MEK, methyl isobutyl ketone (MIBK), toluene, 1,1,1 Trichloroethane (1,1,1-TCA), Tetrachloroethylene (PCE), and xylenes at detectable concentrations.

In June 1990, SCS performed an additional site investigation at the site by advancing six additional borings advanced from 20.5' bg to 60' bg. A monitoring well (MW-1) was also installed. Soil sample analysis identified detectable concentrations of the above mentioned VOCs in addition to acetone and methylene chloride. Dissolved benzene, 1,1-DCA, 1,1-DCE, PCE, Trichloroethylene (TCE), and trans-1,2-dichloroethene were detected in MW-1 above maximum contaminant levels.

Between 1993 and 1994, SCS performed further testing at the site. Soil samples were collected from nine borings. Five borings were converted to groundwater monitoring wells MW-2, MW-3, MW-4, MW-6, and MW-7 (See Figure 2, Well Location Map). The predominant compounds detected in soil were acetone, MEK, MIBK, PCE, toluene, 1,1,1-TCA, TCE, and xylenes. Groundwater sample collection performed in

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February 1994 by SCS identified the following using EPA method 624 (laboratory results included in Remedial Investigation Report dated August 1994 by SCS):

Component Analyzed	MW-1	MW-2	MW-3	MW-4	MW-6	MW-7
Benzene	194	<100	63	111	795	46
1,1-DCA	649	1,130	85	1,410	2,260	2,130
1,2-DCA	<100	<100	<50	<100	1,140	31
1,1-DCE	2,210	2,460	2,800	806	1,240	151
Ethylbenzene	333	1,720	115	1,180	1,910	45
Methylene Chloride	1,220	2,980	6,530	4,760	21,400	<50
PCE	662	2,150	5,370	3,320	2,130	134
Toluene	560	7,390	579	12,700	13,500	398
1,1,1-TCA	9,370	3,470	444	36,200	114,000	90
TCE	7,160	3,040	1,730	14,300	1,320	45
Xylenes	1,750	7,790	1,014	4,362	4,710	186
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

In 1996, SCS performed separate soil vapor extraction pilot testing beneath the site at approximately 10' bg and 22' bg. Laboratory analysis identified maximum soil vapor gas concentrations as 1,1,1-TCA (30,300 ppmV) with detectable concentrations of 1,1-DCE, TCE, methylene chloride, toluene, PCE and xylenes. The maximum radius of influence from the various extraction units used were measured as 35 feet at 10' bg and 80 feet at 22' bg.

In November 1997, SCS performed a soil vapor survey at the site. Soil vapor samples were collected at twenty-three locations at 5' bg. In addition, soil vapor samples were collected at 15' bg in five of the twelve sampling points. The soil vapor survey identified maximum VOC contaminants near the railroad tracks on site, the location where a rail tanker reportedly had an accidental release.

In July 2000, BEII contracted BLC Surveying, Inc. to perform a site survey. Well locations were recorded using the California Plane coordinate systems. A copy of the survey is on file with the DTSC.

In September 2000, Blaine Tech Services, Inc. gauged the six on-site monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-6, and MW-7) under the supervision of BEII. Free product (FP) was identified in monitoring well MW-4 at 0.21-feet in thickness. Approximately 0.5 liters of FP were removed from the well and placed in a sealed 55-gallon drum.

BEII performed a soil vapor gas survey at the site from November 27 to December 1, 2000. A total of 36 soil vapor sample points, labeled SV1 through SV36, were selected by BEII and approved by the DTSC for analysis. Two discrete soil vapor samples were collected from each soil vapor sample point, one at 8' bg and one at 20' bg. SV1 was an exception since the first soil vapor sample was collected at 10' bg instead of

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8' bg. Based on the soil vapor sample results, BEII identified relatively low level concentrations of VOCs in the silty clay soils at 8' bg. However, the concentrations of VOCs are significantly higher in the sandy soils at 20' bg in OU-1. Results were submitted to the DTSC by BEII in a Report of Findings dated January 10, 2001 with laboratory reports (BEII Report of Findings dated January 10, 2001).

On November 30, 2000, Blaine Tech Services, Inc. (Blaine) was contracted to perform groundwater sampling at the site. Groundwater monitoring wells MW-4 and MW-6 identified were not sampled due to the presence of free product. These wells were installed to monitor a perched groundwater body to the north. Free product was identified in MW-1 during sample collection, upon completion of well purging. The potentiometric groundwater level was above the well screen. Groundwater purging lowered the potentiometric level below the screened interval, allowing free product to enter. Groundwater sample analysis identified thirteen constituents of concern (COCs) in the dissolved phase as VOCs only. Laboratory analysis of metals and SVOCs identified concentrations below allowable levels for those constituents. Results were submitted by BEII to the DTSC in a Report of Findings dated January 10, 2001 with laboratory reports.

The remaining USTs have been excavated or slurry filled for closure under the supervision of the Santa Fe Springs fire Department. A report was be submitted to the DTSC upon completion by EREMCO.

3.0) REGIONAL GEOLOGY/HYDROGEOLOGY

The site is located near the northern boundary of the Santa Fe Springs Plain within the Los Angeles Coastal Plain at an elevation of approximately 150 feet above mean sea level. Surficial sediments consist of fluvial deposits composed of inter-bedded gravel, sand, silt, and clay. Available data from California Water Resources Bulletin No. 104 (June 1961) indicate that the surficial sediments may be Holocene and/or part of the upper Pleistocene Lakewood Formation, which ranges from 40 to 50 feet thick beneath the site. The Lakewood Formation has lateral lithologic changes with discontinuous permeable zones that vary in particle size. Stratified deposits of sand, silty sand, silt, and fine gravel comprising the upper portion of the lower Pleistocene San Pedro Formation underlies the Lakewood Formation.

The site lies within the Central Basin Pressure area, a division of the Central Ground Water Basin, which extends over most of the Coastal Plain. The Gasper aquifer, a part of the basal coarse unit of Holocene deposits, is found within old channels of the San Gabriel and other rivers. The Gasper aquifer may be 40-feet in thickness, with its base at a depth of about 80 to 100-feet bg. The underlying Gage aquifer is found within the Pleistocene Lakewood Formation. The Hollydale aquifer is the uppermost regional aquifer in the Pleistocene San Pedro Formation. Bulletin 104 indicates that this aquifer averages approximately 30-feet in thickness in this area, with its top at a depth of about 70 feet bg. The major water producing aquifers in the region are the Lynwood aquifer

located approximately 200-feet bg, the Silverado aquifer located at approximately 275-feet bg, and the Sunnyside aquifer located at approximately 600-feet bg.

4.0) SITE GEOLOGY/HYDROGEOLOGY

SCS identified silty clays with some minor amounts of silt and sand in the shallow subsurface from surface grade to approximately 15' bg. Below the silty clay, poorly sorted coarse-grained sand and gravel from 15' bg to 26' bg. SCS referenced a less permeable silty clay layer between 35' and 50' bg, which contained stringers of fine sand and silt that is part of the Gaspar/Hollydale aquifer.

A perched aquifer was encountered at approximately 23' bg by SCS and referenced as such by SCS. Based on a review of McKesson files, Harding Lawson Associates (HLA) stated that in January 1975 prior to McKesson operating their neighboring facility, no groundwater was encountered to a depth of 45' bg beneath the McKesson property. In March 1986, during operation of the neighboring McKesson facility, groundwater was encountered at 22' bg beneath the McKesson property as stated by HLA. Based on the HLA statements, BEII concludes with SCS that the first encountered groundwater is part of a shallow perched aquifer. The sediments within this perched aquifer appear to be consistent with the Gaspar Aquifer. Monitoring wells MW-4, MW-6, MW-8, and MW-9 will be noted as Gaspar monitoring wells with groundwater at approximately 30' bg.

SCS also referenced that the Gaspar/Hollydale Aquifer was encountered at 20' to 35' bg beneath the site. Further review of Bulletin 104 by BEII and DTSC, identified that the SCS referenced Gaspar/Hollydale Aquifer was in fact the Gage/Hollydale Aquifer. Monitoring wells MW-1, MW-2, MW-3, and MW-7 will be noted as Gage/Hollydale monitoring wells since they are screened in that deeper groundwater which is now at approximately 40' bg.

The groundwater gradient flowed historically to the southwest as identified by SCS. In October 2002, the groundwater was identified between 26.48' bg to 44.66' bg beneath the site. BEII recommends an additional monitoring well in the Gage/Hollydale Aquifer to calculate the groundwater gradient beneath the site, since monitoring wells MW-1, MW-2, and MW-3 are in a straight line of each other. Figure 3 contains the depth to water in each well in feet below grade with the well elevations given as feet above mean sea level.

5.0) GROUNDWATER MONITORING PROTOCOL

The purpose of the proposed groundwater monitoring was to provide data regarding the piezometric surface, water quality, and the presence of free product (FP), if any on a quarterly basis to the DTSC. Groundwater monitoring consisted of such activities as water level measurement, well sounding for detection of FP, collection of

groundwater samples, field analysis, laboratory analysis, and reporting. The proposed work was performed as follows:

The depth to groundwater was measured in each well using a decontaminated water level indicator capable of measuring to within 1/100th of a foot. Prior to and following collection of measurements from each well, the portions of the water level indicator entering groundwater were decontaminated using a 3-stage decontamination procedure consisting of a potable wash with water containing Liquinox soap followed by a double purified water rinse. Wells were monitored in the order of least contaminated to the most contaminated based on past analysis. For the Angeles Chemical Co. wells, the following order of wells was followed: MW-9, MW-7, MW-2, MW-3, MW-1, MW-4, MW-6, and MW-8.

The well box and casing were opened carefully to minimize the amount of debris or dirt falling into the open casing. Once the well cap was removed, the water level indicator was lowered into the well until a consistent tone was registered. Several soundings were repeated to verify the measured depth to groundwater. The depth of groundwater was measured from a reference point marked on the lip of each well casing. A licensed surveyor has surveyed the elevation of each reference point. The result was recorded on the field sampling log for each well. Other relevant information such as physical condition of the well, presence of hydrocarbon odors, etc. was also recorded as appropriate on the field sampling log.

The well sounder used for this project was equipped to measure free product (FP) layers thicker than 0.1 inches. FP was indicated as light non-aqueous phase liquid (LNAPL) or dense non-aqueous phase liquid (DNAPL).

Groundwater purging was conducted immediately following the collection of a groundwater depth measurement from all monitoring wells. Groundwater samples were analyzed for the following constituents:

- Volatile organic compounds (VOCs) using EPA Method 8260B to include all Tentatively Identified Compounds (TICs).
- Total Petroleum Hydrocarbons as gasoline (TPH-gas) using EPA Method 8015 modified.
- Title 22 (CAM 17 heavy metals) metals using EPA Method 7000 series.
- Perchlorate using EPA Method 314 by Ion Chromatography.

5.1) Well Purging and Measurement of Field Parameters

Wells were purged in the following order MW-9, MW-7, MW-2, MW-3, and MW-1 to minimize the potential for cross contamination. The wells were purged by Blaine Tech Services, Inc (Blaine) and sampled by BEII on October 7, 2002 in the presence of Mr. Sanford Britt of the DTSC. The purge protocol was

presented in the Field Sampling Plan as Appendix A in the Groundwater Monitoring Work Plan dated October 23, 2001 and submitted to the DTSC.

Prior to purging, casing volumes was calculated based on total well depth, standing water level, and casing diameter. One casing volume was calculated as:

$$V = \pi(d/2)^2 h \times 7.48$$

where:

V is the volume of one well casing of water (in gallons, $1 \text{ ft}^3 = 7.48$ gallon);
d is the inner diameter of the well casing (in feet); and
h is the total depth of water in the well - the depth to water level (in feet).

A minimum of three casing volumes of water was purged from each well except for MW-2, which dewatered after eight gallons. Water was collected into a measured bucket to record the purge volume. All purged groundwater was containerized in 55-gallon hazardous waste drum for disposal at a later date.

After each well casing volume was purged; water temperature, pH, specific conductance (EC), and turbidity were measured using field test meters and the measurements were recorded on Well Monitoring Data Sheets (See Appendix A). Samples were collected after these parameters have stabilized; indicating that representative formation water has entered the well. The temperature, pH, and specific conductance should not vary by more than 10 percent from reading to reading. Turbidity should be less than 5 NTUs, however, the purging process stirred up silty material in each well which made the turbidity measurements of 5 NTUs unattainable. Groundwater samples were collected after water levels recharged to 80 percent of the static water column. Notations of water quality including color, clarity, odors, sediment, etc. were also noted in the data sheets.

All field meters were calibrated according to manufacturers' guidelines and specifications before and after each day of field use. Field meter probes were decontaminated before and after use at each well. The pH, conductivity, and temperature were measured with a Myron-L Ultra Meter and turbidity was measured with a HF Scientific DRT-15C meter. The calibration standards used for pH were 4 and 7 with expiration dates of July 2003. Conductivity was calibrated to a 3900 μS standard with an expiration date of July 2003. A 0.02 NTU standard was used to calibrate the turbidity with an expiration date of July 2003.

5.2) Well Sampling

Groundwater samples were collected by lowering a separate disposable

bailer into each well. Groundwater was transferred from the bailer directly into the appropriate sample containers with preservative, if required, chilled, and processed for shipment to the laboratory. When transferring samples, care was taken not to touch the bailer-emptying device to the sample containers. Water samples were transported to Southland Technical Services, Inc., a certified laboratory by the California Department of Health Services (Cert. #1986) to perform the requested analysis.

Groundwater samples were collected from monitoring wells MW-9, MW-7, MW-3, MW-2, and MW-1 only. Monitoring wells MW-4, MW-6, and MW-8 identified FP as LNAPL at a thickness of 0.06', 0.39' and 0.92', respectively. The FP thickness in MW-6 is assumed based on the depth of the well bottom since no water was identified in the well.

Vials for VOC and TPH analysis were filled first to minimize aeration of groundwater collected in the bailer. The laboratory provided vials containing sufficient HCl preservative to lower the pH to less than 2. The vials were filled directly from the bottom-emptying device. The vial was capped with a cap containing a Teflon septum. Blind duplicate samples for the laboratory were labeled as "MW-5" and were collected from monitoring well MW-1 only. The vial was inverted and tapped to check for bubbles to insure zero headspace. Free product was also collected in vials from MW-8 for perchlorate using EPA method 314.

Groundwater sample collection for dissolved metals followed. The laboratory provided 500-mL poly containers. The containers were filled directly from the bottom-emptying device.

New nitrile gloves were worn during by sampling personnel for each well to prevent cross contamination of the samples. A solvent free label was affixed to each sample container/vial denoting the well identification, date and time of sampling, and an identifying code to distinguish each individual bottle.

5.3) Sample Handling

VOA vials and 500-mL poly containers, including laboratory trip blanks and rinse blanks, were placed inside of one new Ziplock bag per well and stored in a cooler chilled to approximately 4°C with bagged ice. Water samples were logged on the chain-of-custody forms immediately following sampling of each well to insure proper tracking through analysis to the laboratory.

5.4) Waste Management

FP, purged groundwater, and decontamination water were stored in sealed

55-gallon drums for a period not to exceed 90 days. Stored wastes will be profiled for hazardous constituents and characterized as Non-Hazardous, California Hazardous, or RCRA Hazardous, as appropriate. Any transportation of waste will be under appropriate manifest.

6.0) GROUNDWATER SAMPLE RESULTS

Monitoring wells MW-4, MW-6, and MW-8 identified FP as LNAPL at a thickness of 0.06', 0.39' and 0.92', respectively. A total of 1-gallon of FP was recovered from MW-6 and 7 ½-gallons of FP was recovered from MW-8 to date. Monitoring well MW-4 contained such a small amount of fluid within the well that a bailer was unable to retrieve any liquid.

Laboratory analysis of the FP was performed in June 2002 and identified dissolved TPH-gas at 812,000 mg/L from MW-6 and 801,000 mg/L from MW-8. Concentrations of dissolved TPH as diesel were also identified in FP as 53,400 mg/L from MW-6 and 56,600 mg/L from MW-8. No detectable concentrations of TPH as motor oil were identified in FP collected from both wells.

Groundwater samples collected from monitoring wells MW-1, MW-2, MW-3, MW-7, and MW-9 in October 2002 contained TPH-gas ranging from 52,300 µg/L in MW-1 to 1,730 mg/L in MW-9. See Table 1 and Figure 4 for dissolved TPH-gas concentrations. The maximum TPH-gas decreased in MW-1 from 724,000 µg/L in the June 2002 groundwater monitoring episode. The 2002 third quarter groundwater monitoring episode identified dissolved TPH-gas concentrations as 5,300 µg/L on the north side of the property (MW-7) and 1,730 µg/L on the east side of the property (MW-9). However, concentrations of dissolved TPH-gas on the south side of the property (MW-1, MW-2, and MW-3) averaged 29,857 µg/L, a decrease from 253,700 µg/L identified from the previous quarterly sampling.

Groundwater sample results from the Gage/Hollydale aquifer identified relatively low VOC concentrations to the north and east side of the site and relatively high VOC concentrations to the south end of the site along the McKesson property (See Table 2 and Appendix B for laboratory results).

The 2002 third quarter groundwater monitoring episode identified dissolved BTEX concentrations as 3,470 µg/L in MW-7 located along the northern boundary of the property. Toluene and xylene combined for a total of 3,136 µg/L of the total 3,470 µg/L as BTEX in groundwater collected from MW-7. Monitoring well MW-9 located on the east side of the property identified dissolved BTEX as 893 µg/L, exclusively as benzene. On the south side of the property, dissolved BTEX concentrations ranged from 10,089 µg/L to 758 µg/L in monitoring wells MW-1 through MW-3 (See Figure 4 for dissolved BTEX concentrations). Most of the dissolved BTEX concentrations from all southern Gage/Hollydale monitoring wells consisted of toluene and xylene as 82-88% of the total

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BTEX, with the exception of MW-2 which identified mostly benzene and ethylbenzene as 72% of the total BTEX. However, monitoring well MW-2 contained the least amount of total dissolved BTEX at 758 µg/L.

Concentrations of dissolved PCE and TCE were identified as non-detect (<2 µg/L) in groundwater from MW-7 located along the northern boundary of the property. PCE and TCE concentrations in groundwater were identified as 190 µg/L and 56.6 µg/L, respectively, from MW-9 located on the east side of the property. Dissolved PCE and TCE concentrations were exclusively detected in MW-3 along the southern boundary of the property as 39.3 µg/L and 28 µg/L, respectively (See Figure 5 for dissolved PCE concentrations). Again, dissolved VOC concentrations were detected at higher levels along the south side of the property.

No detectable concentrations of 1,1,1 TCA (<5 µg/L) were identified in the Gage/Hollydale monitoring wells. Only Gasper monitoring well MW-9 contained dissolved 1,1,1 TCA at 92 µg/L. No significant concentrations of parent VOC concentrations (PCE, TCE, or 1,1,1 TCA) were identified beneath the former Angeles Chemical site.

Concentrations of dissolved chlorinated VOC daughter products were relatively elevated compared to their respective parent VOCs and also showed a trend of higher dissolved concentrations along the southern boundary of the property.

1,1 DCA is a daughter product from reductive dehalogenation of 1,1,1-TCA and from carbon-carbon double bond reduction of 1,1 DCE, another daughter product. Dissolved 1,1 DCA was identified at a concentration of 5,680 µg/L in MW-7, which is located along the north side of the property. On the east side of the property, monitoring well MW-9 contained dissolved 1,1 DCA concentrations at 1,390 µg/L. Concentrations of dissolved 1,1 DCA along the southern side of the property were identified as 10,400 µg/L in MW-1, 2,550 µg/L in MW-2, and 1,130 µg/L in MW-3 (See Figure 5 for dissolved 1,1 DCA concentrations).

Dissolved 1,1 DCE, a daughter product of the dehydrohalogenation of 1,1,1 TCA and reductive dehalogenation of TCE, was identified at a concentration of 547 µg/L in groundwater from MW-7. Groundwater collected from MW-9 located on the east side of the property identified dissolved 1,1 DCE as 1,620 µg/L. Dissolved 1,1 DCE was identified in wells MW-1 through MW-3 at concentrations of 3,800 µg/L to 176 µg/L (See Figure 5 for dissolved 1,1 DCE concentrations). Maximum concentrations of dissolved 1,1 DCE were 2 to 7 times greater along the southern side of the property compared to the northern and eastern side.

Cis-1,2 DCE is also a daughter product of the dehydrohalogenation of 1,1,1 TCA and reductive dehalogenation of TCE. Concentrations of dissolved cis-1,2 DCE were identified along the north side of the property at 311 µg/L in MW-7. Groundwater

identified dissolved cis-1,2 DCE at 736 µg/L in MW-9 on the east side. The south side of the property identified dissolved cis-1,2 DCE from 20,700 µg/L to 212 µg/L in monitoring wells MW-1 through MW-3 (See Figure 5 for dissolved cis-1,2 DCE concentrations). Maximum dissolved concentrations of cis-1,2 DCE were 28 to 67 times greater along the southern side of the property compared to the northern and eastern sides. Again, dissolved VOC concentrations were detected at higher levels along the southern side of the property.

Vinyl chloride (VC) is a by product from the dehydrohalogenation and reductive dehalogenation of the chlorinated VOC daughter products mentioned above. Dissolved VC was identified at a concentration of 684 µg/L in MW-7, which is located along the north side of the property. On the east side of the property, monitoring well MW-9 contained dissolved VC concentrations at 123 µg/L. Concentrations of dissolved 1,1 DCA along the southern side of the property were identified as 2,860 µg/L in MW-1, 2,710 µg/L in MW-2, and 12,200 µg/L in MW-3 (See Figure 5 for dissolved VC concentrations). No detectable concentrations of VC were identified in any of the groundwater samples collected from the previous groundwater monitoring episode performed on June 14, 2002.

Groundwater samples were also analyzed for 1,4-Dioxane for the first time in October 2002, a preservative used in 1,1,1 TCA to prolong its shelf life. Unlike the other VOCs, 1,4-Dioxane was identified at greater concentrations along the north side of the property. Monitoring well MW-7 contained dissolved 1,4-Dioxane at a maximum of 27,600 µg/L along the north side. Dissolved 1,4-Dioxane concentrations in groundwater were also detected in MW-9 as 6,290 µg/L and in MW-3 as 1,090 µg/L. No detectable concentrations (<50 µg/L) of 1,4-Dioxane were identified in groundwater collected from MW-1 and MW-2.

Groundwater samples were filtered by the laboratory and analyzed for dissolved metals (See Table 3 and Appendix B for dissolved metal results). Arsenic was the only dissolved metal identified above the maximum contaminant levels (MCLs) of 50 µg/L. Arsenic was identified in groundwater at 78 µg/L in MW-7. All other metals identified concentrations below their respective MCLs.

7.0) CONCLUSIONS

Based on the recent groundwater sample results, BEII concludes that the site is impacted by dissolved VOCs and, to a minor extent, dissolved metals. Dissolved VOC concentrations were detected along the southern property boundary at up to 67 times greater than the dissolved VOC concentrations identified along the northern property boundary. Of all the monitoring wells located on-site, MW-1 identified the maximum concentrations of dissolved VOCs. The data supports that soil VOC residuals from a southern source may be impacting the well. However, further groundwater monitoring is

needed to determine whether this is in fact occurring. Arsenic was the only metal detected above MCLs from groundwater analysis.

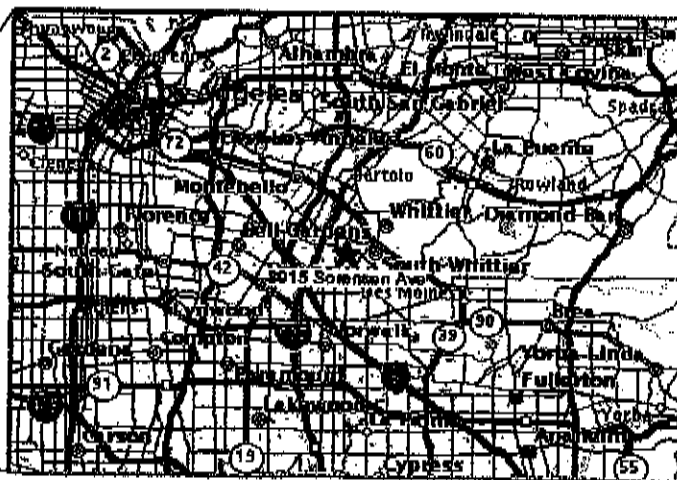
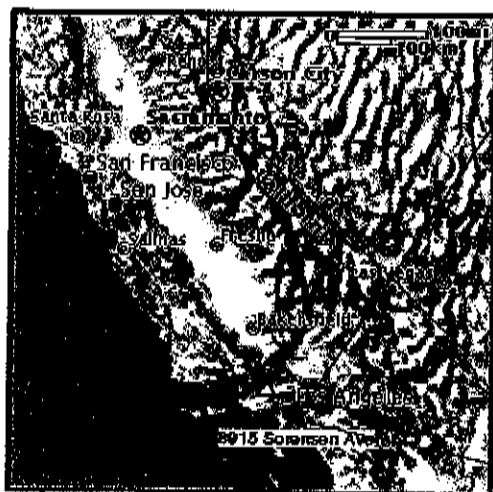
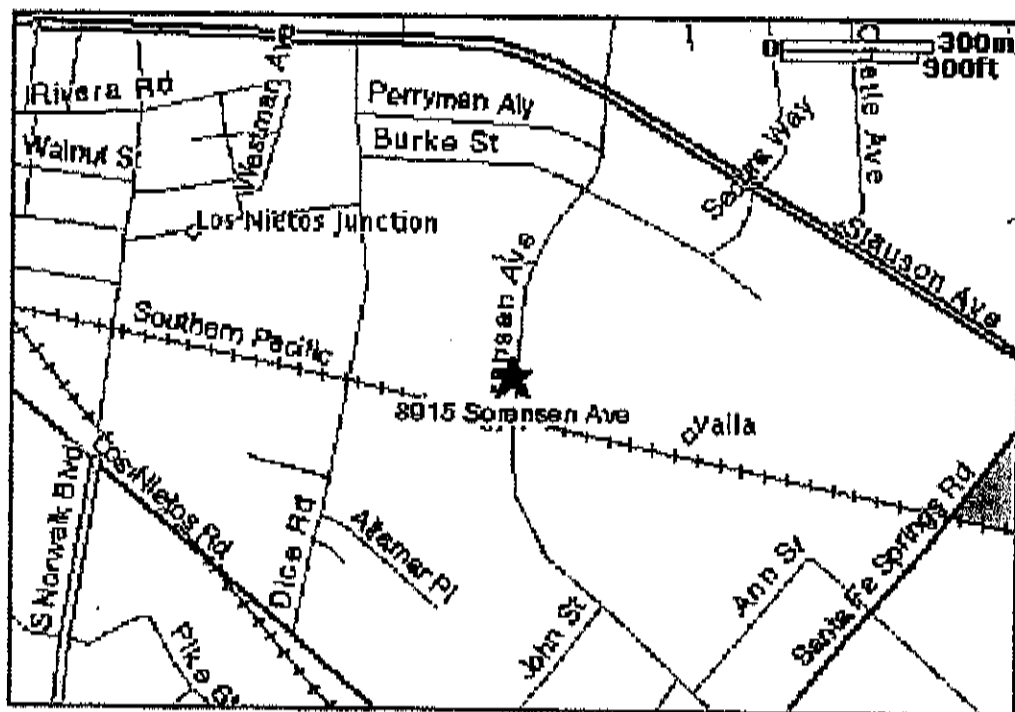
BEII also concludes that the recent groundwater sampling data provides preliminary support that the site has potential for intrinsic biodegradation. Groundwater parent VOC concentrations were identified at less than 190 µg/L. Daughter VOC constituents identified dissolved concentrations of up to 20,700 µg/L. However, further groundwater monitoring is needed to determine whether intrinsic biodegradation is occurring.

8.0) RECOMMENDATIONS

BEII recommends that quarterly groundwater monitoring for VOCs and dissolved metals be continued at the former Angeles Chemical Co. property. BEII further recommends that free product removal be performed on a monthly basis to reduce its mass.

FIGURES

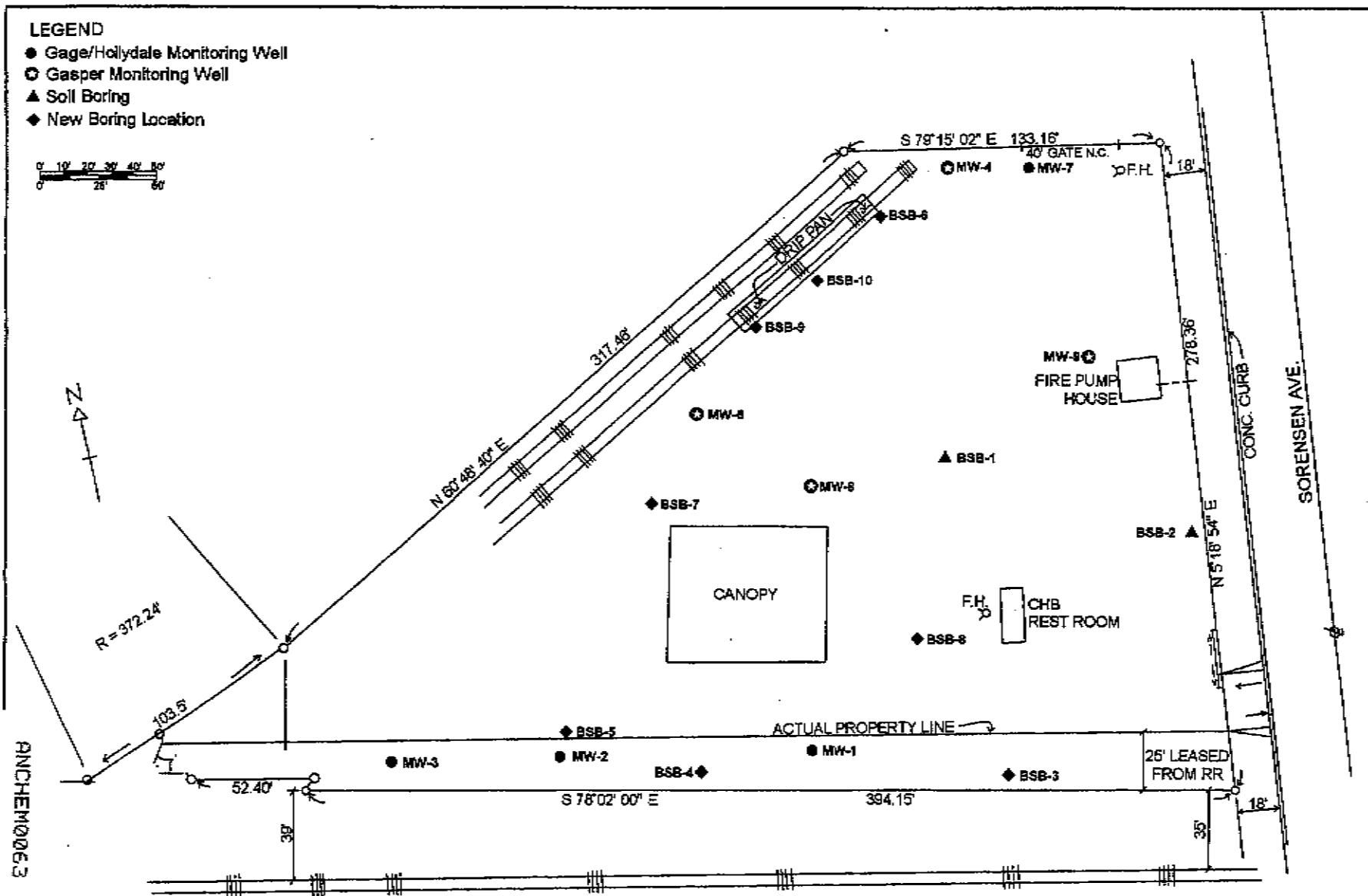
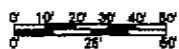
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Blakely Environmental Investigations, Inc. 9605 Arrow Route, Suite T Rancho Cucamonga, CA	Site Location Map	FIGURE
	Former Angeles Chemical Co. 8915 Sorensen Ave. Santa Fe Springs, CA	1

LEGEND

- Gage/Hollydale Monitoring Well
- ⊙ Gasper Monitoring Well
- ▲ Soil Boring
- ◆ New Boring Location



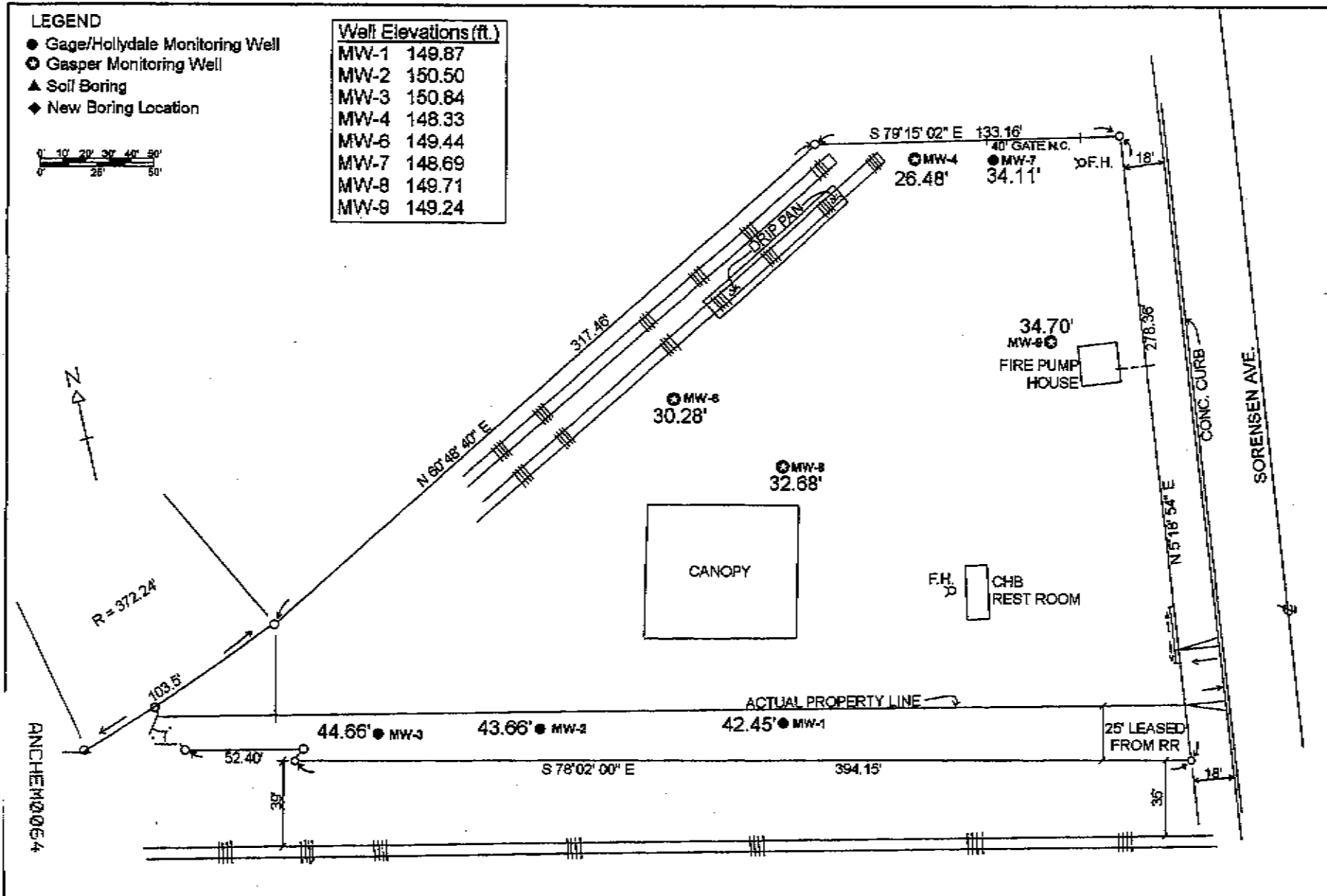
Blakely Environmental Investigations, Inc.
9605 Arrow Route, Suite T
Rancho Cucamonga, California

Site Layout Map
Former Angeles Chemical Company
8915 Sorensen Avenue, Santa Fe Springs, CA

FIGURE 2

- Gager/Hollydale Monitoring Well
- ⊙ Gasper Monitoring Well
- ▲ Soil Boring
- ◆ New Boring Location

Well Elevations (ft.)	
MW-1	149.87
MW-2	150.50
MW-3	150.84
MW-4	148.33
MW-6	149.44
MW-7	148.69
MW-8	149.71
MW-9	149.24



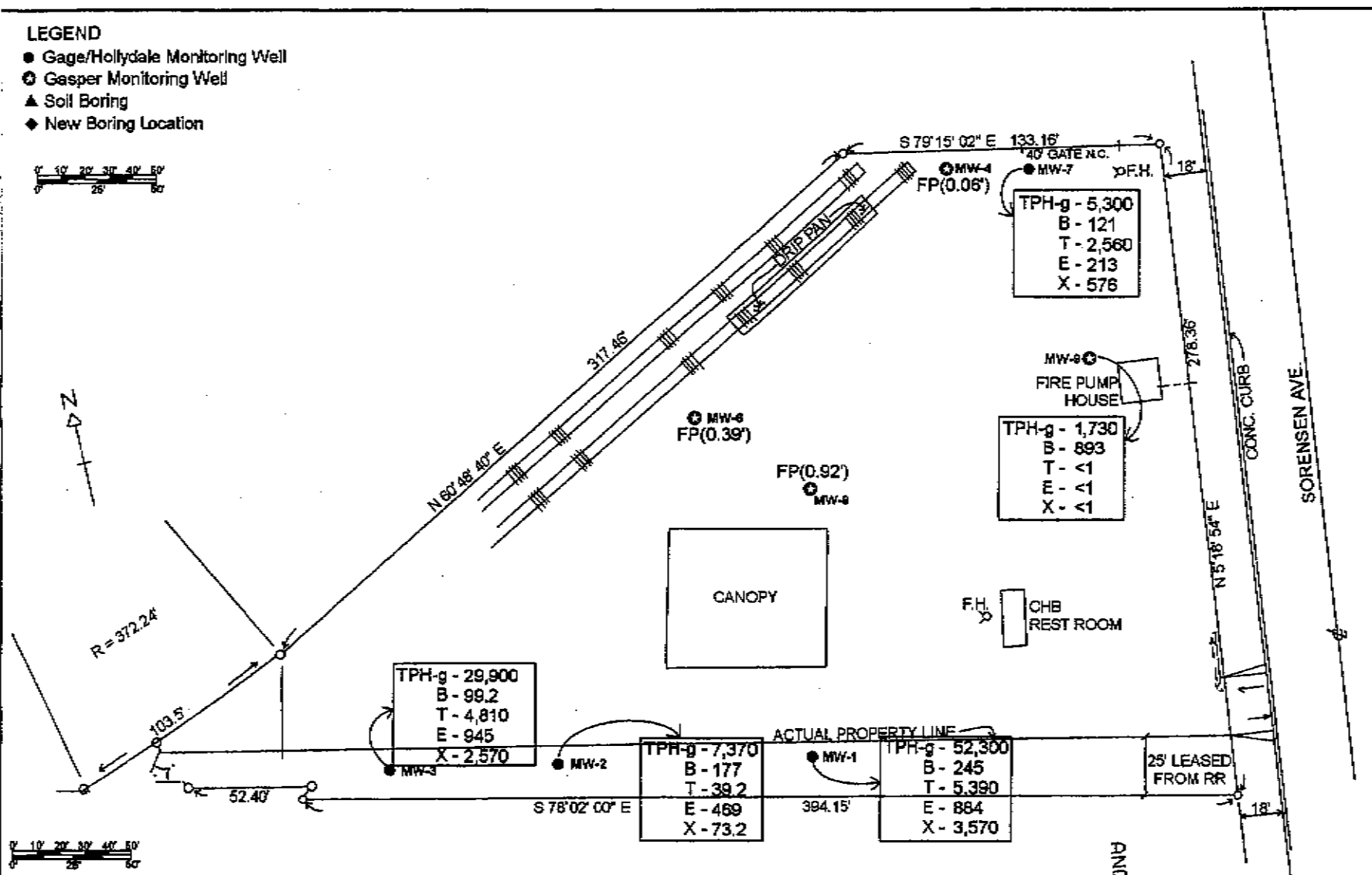
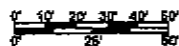
Blakely Environmental Investigations, Inc.
9605 Arrow Route, Suite T
Rancho Cucamonga, California

Depth to Groundwater
Former Angeles Chemical Company
8915 Sorensen Avenue, Santa Fe Springs, CA

FIGURE 3

LEGEND

- Gage/Hollydale Monitoring Well
- ⊙ Gasper Monitoring Well
- ▲ Soil Boring
- ◆ New Boring Location



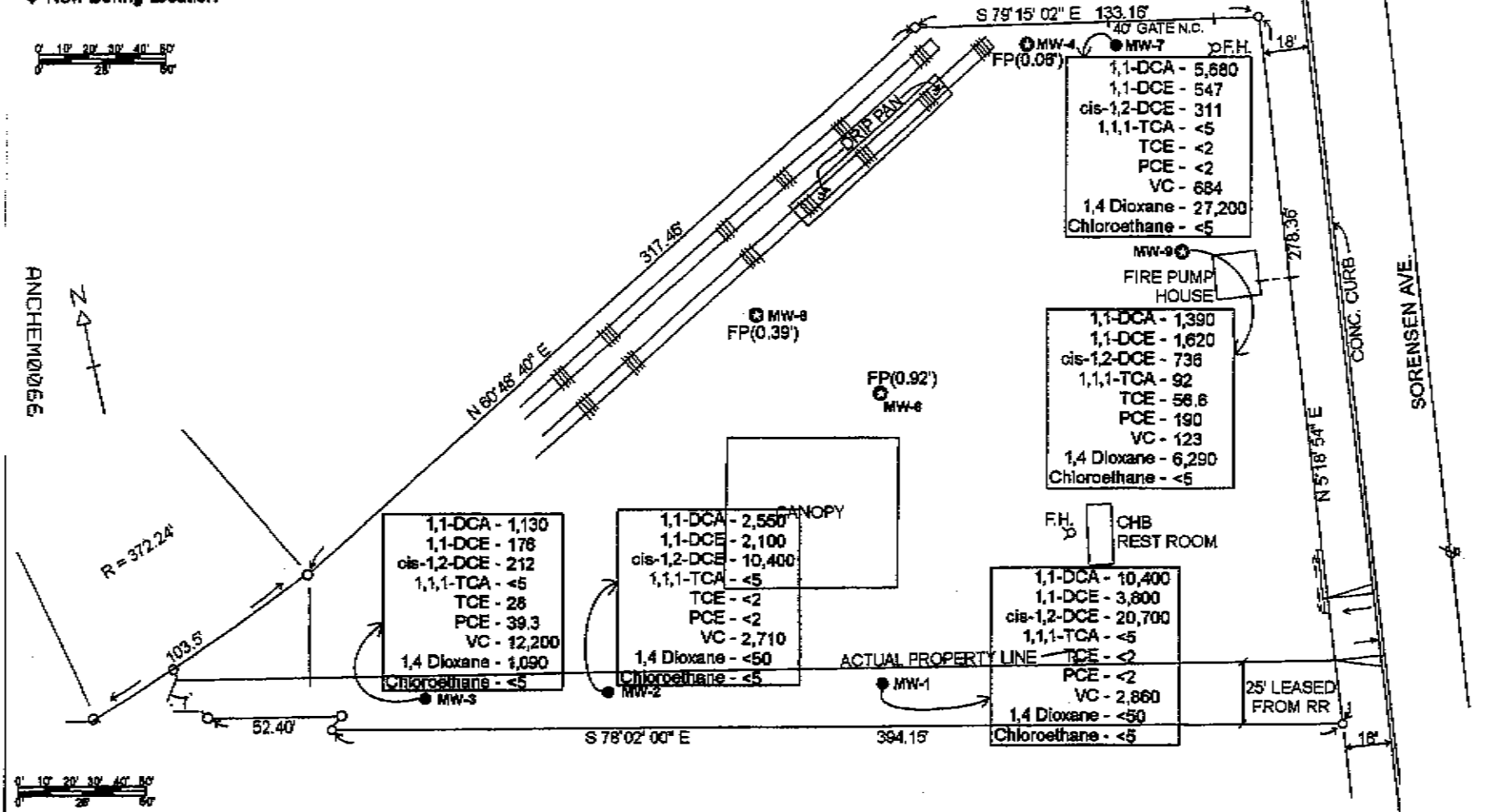
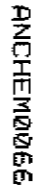
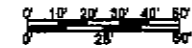
Blakely Environmental Investigations, Inc.
9605 Arrow Route, Suite T
Rancho Cucamonga, California

October 2002 Dissolved TPH-g and BTEX Concentrations (ppb)
Former Angeles Chemical Company
8915 Sorensen Avenue, Santa Fe Springs, CA

ANCHEN0065

FIGURE 4

- Gage/Hollydale Monitoring Well
- ⊙ Gasper Monitoring Well
- ▲ Soil Boring
- ◆ New Boring Location



October 2002 Dissolved Chlorinated Hydrocarbons and Daughter Product Concentrations (ppb)

Former Angeles Chemical Company
8915 Sorensen Avenue, Santa Fe Springs, CA

FIGURE 5

ANCHEM0067

Table 1: TPH-gas Groundwater Sample Results using EPA Method 8015 (ug/L)

<u>Date</u>	<u>MW-1</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>	<u>MW-6</u>	<u>MW-7</u>	<u>MW-8</u>	<u>MW-9</u>
Oct-01	NA	NA	NA	NA	NA	NA	NA	NA
Feb-02	NA	NA	NA	NA	NA	NA	NA	NA
Jun-02	724,000	14,600	22,500	NS-FP	812,000,000*	8,530	801,000,000*	22,700
Oct-02	52,300	7,370	29,900	NS-FP	NS-FP	5,300	52,300	1,730

NS-FP= Not Sampled Free Product present.

*= Analysis of Free Product.

Table 2: Detected VOCs from Groundwater Sample Results using EPA Method 8260 (ug/L)

VOCs	Date	MW-1	MW-2	MW-3	MW-4	MW-6	MW-7	MW-8	MW-9
Acetone	Oct-01	<1,250	<250	<625	NS-NW	<25,000*	1,190		
	Feb-02	<625	<62.5	3,150	NS-FP	NS-FP	746		
	Jun-02	<25	<25	<25	NS-FP	NS-FP	<25	NS-FP	<25
	Oct-02	<25	<25	<25	NS-FP	NS-FP	<25	NS-FP	<25
Benzene	Feb-94	194	<100	63	111	795	46		
	Nov-00	<2,500	61	73	NS-FP	NS-FP	65		
	Oct-01	125	105	110	NS-NW	110,000*	55		
	Feb-02	231	204	108	NS-FP	NS-FP	63.2		
	Jun-02	300	222	125	NS-FP	NS-FP	<1	NS-FP	90.8
	Oct-02	245	177	99.2	NS-FP	NS-FP	121	NS-FP	893
2-Butanone (MEK)	Feb-94	NA	NA	NA	NA	NA	NA		
	Nov-00	3,100	<10,000	<10,000	NS-FP	NS-FP	1,400		
	Oct-01	<1,250	<250	500	NS-NW	<25,000*	980		
	Feb-02	<625	<62.5	<500	NS-FP	NS-FP	<50		
	Jun-02	<25	<25	<25	NS-FP	NS-FP	<25	NS-FP	<25
	Oct-02	<25	<25	<25	NS-FP	NS-FP	<25	NS-FP	<25
Chloroethane	Feb-02	<125	119	<100	NS-FP	NS-FP	17		
	Jun-02	<5	<5	<5	NS-FP	NS-FP	<5	NS-FP	<5
	Oct-02	<5	<5	<5	NS-FP	NS-FP	<5	NS-FP	<5
1,1-Dichloroethane	Feb-94	649	1,130	85	1410	2,260	2,130		
	Nov-00	17,000	1,800	800	NS-FP	NS-FP	2,800		
	Oct-01	8,190	1,500	1,030	NS-NW	592,000*	2,670		
	Feb-02	20,600	2,310	1,350	NS-FP	NS-FP	5,490		
	Jun-02	18,900	2,700	1,340	NS-FP	NS-FP	4,150	NS-FP	1,210
	Oct-02	10,400	2,550	1,130	NS-FP	NS-FP	5,680	NS-FP	1,390
1,2-Dichloroethane	Feb-94	<100	<100	<50	<100	1140	31		
	Nov-00	<2,500	<500	<500	NS-FP	NS-FP	<500		
	Oct-01	<250	<50	<125	NS-NW	<5,000*	<25		
	Feb-02	<125	<12.5	<100	NS-FP	NS-FP	43.4		
	Jun-02	<5	<5	<5	NS-FP	NS-FP	<5	NS-FP	<5
	Oct-02	<5	<5	<5	NS-FP	NS-FP	<5	NS-FP	<5

Table 2 (cont.): Detected VOCs from Groundwater Sample Results using EPA Method 8260 (ug/L)

VOCs	Date	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9
1,1-Dichloroethene	Feb-94	2,210	2,460	2,800	806	1,240	151			
	Nov-00	3,000	<500	2,900	NS-FP	NS-FP	350			
	Oct-01	1,200	1,120	4,090	NS-NW	417,000*	355			
	Feb-02	4,050	1,480	3,900	NS-FP	NS-FP	778			
	Jun-02	4,900	2,090	2,690	NS-FP	NS-FP	423	NS-FP	1,540	
	Oct-02	3,800	2,100	176	NS-FP	NS-FP	547	NS-FP	1,620	
cis 1,2-Dichloroethene	Feb-94	NA	NA	NA	NA	NA	NA			
	Nov-00	20,000	9,500	5,700	NS-FP	NS-FP	210			
	Oct-01	10,300	9,150	7,000	NS-NW	1,060,000*	194			
	Feb-02	29,100	11,100	7,960	NS-FP	NS-FP	268			
	Jun-02	31,100	14,800	6,860	NS-FP	NS-FP	238	NS-FP	612	
	Oct-02	20,700	10,400	212	NS-FP	NS-FP	311	NS-FP	736	
trans 1,2-Dichloroethene	Feb-94	NA	NA	NA	NA	NA	NA			
	Nov-00	<2,500	<500	<500	NS-FP	NS-FP	<500			
	Oct-01	<250	<50	<125	NS-NW	<5,000*	<25			
	Feb-02	<125	<12.5	<100	NS-FP	NS-FP	<10			
	Jun-02	<5	<5	<5	NS-FP	NS-FP	<5	NS-FP	<5	
	Oct-02	<5	<5	<5	NS-FP	NS-FP	<5	NS-FP	<5	
Ethylbenzene	Feb-94	333	1,720	115	1,180	1,910	45			
	Nov-00	960	120	1,000	NS-FP	NS-FP	82			
	Oct-01	805	197	1,550	NS-NW	4,320,000*	107			
	Feb-02	875	115	1,360	NS-FP	NS-FP	94.4			
	Jun-02	1,450	147	1,470	NS-FP	NS-FP	124	NS-FP	<1	
	Oct-02	884	469	945	NS-FP	NS-FP	213	NS-FP	<1	
Methylene Chloride	Feb-94	1,220	2,980	6,530	4,760	21,400	<50			
	Nov-00	1,100	180	5,600	NS-FP	NS-FP	180			
	Oct-01	<1,250	<250	<625	NS-NW	<5,000*	<125			
	Feb-02	<250	18.5	3,960	NS-FP	NS-FP	<20			
	Jun-02	<5	<5	<5	NS-FP	NS-FP	<5	NS-FP	<5	
	Oct-02	<5	<5	<5	NS-FP	NS-FP	<5	NS-FP	<5	

Table 2 (cont.): Detected VOCs from Groundwater Sample Results using EPA Method 8260 (ug/L)

VOCs	Date	MW-1	MW-2	MW-3	MW-4	MW-6	MW-7	MW-8	MW-9
4-Methyl-2-pentanone	Oct-01	<1,250	<250	4,130	NS-NW	<25,000*	625		
	Feb-02	<625	<62.5	3,470	NS-FP	NS-FP	376		
	Jun-02	<25	<25	2,850	NS-FP	NS-FP	388	NS-FP	<25
	Oct-02	<25	<25	1,410	NS-FP	NS-FP	276	NS-FP	<25
Naphthalene	Oct-01	165	76	<125	NS-NW	1,680,000*	85		
	Feb-02	195	64	122	NS-FP	NS-FP	74.8		
	Jun-02	<5	89.4	178	NS-FP	NS-FP	116	NS-FP	<5
	Oct-02	<5	62.2	59.2	NS-FP	NS-FP	<5	NS-FP	<5
n-Propylbenzene	Jun-02	<5	28.5	<5	NS-FP	NS-FP	<5	NS-FP	<5
	Oct-02	<5	44.2	<5	NS-FP	NS-FP	<5	NS-FP	<5
Tetrachloroethene	Feb-94	662	2,150	5,370	3,320	2,130	134		
	Nov-00	<2,500	<500	130	NS-FP	NS-FP	<500		
	Oct-01	<100	<20	130	NS-NW	531,000*	100		
	Feb-02	20	3.3	302	NS-FP	NS-FP	8.2		
	Jun-02	24.8	<5	133	NS-FP	NS-FP	<5	NS-FP	122
	Oct-02	<2	<2	39.3	NS-FP	NS-FP	<2	NS-FP	190
1,1,1-Trichloroethane	Feb-94	9,370	3,470	444	36,200	114,000	90		
	Nov-00	<2,500	<500	70	NS-FP	NS-FP	<500		
	Oct-01	<250	<50	<125	NS-NW	28,100,000*	<25		
	Feb-02	<125	<12.5	<100	NS-FP	NS-FP	<10		
	Jun-02	<5	<5	<5	NS-FP	NS-FP	<5	NS-FP	<5
	Oct-02	<5	<5	<5	NS-FP	NS-FP	<5	NS-FP	92
Trichloroethene	Feb-94	7,160	3,040	1,730	14,300	1,320	45		
	Nov-00	<2,500	<500	1,500	NS-FP	NS-FP	<500		
	Oct-01	<100	<20	100	NS-NW	753,000*	<10		
	Feb-02	20	2.5	260	NS-FP	NS-FP	6.8		
	Jun-02	<5	<5	134	NS-FP	NS-FP	<5	NS-FP	<5
	Oct-02	<2	<2	28	NS-FP	NS-FP	<2	NS-FP	56.6

Table 2 (cont.): Detected VOCs from Groundwater Sample Results using EPA Method 8260 (ug/L)									
VOCs	Date	MW-1	MW-2	MW-3	MW-4	MW-6	MW-7	MW-8	MW-9
DTW	Feb-94	30.05'	28.80'	29.70'	23.35'	24.85'	24.53'		
	Nov-00	35.62'	35.28'	36.42'	26.20'	28.52'	28.19'		
	Oct-01	37.41'	37.91'	39.19'	26.35'	NA	28.70'		
	Nov-01	NA	NA	NA	26.36'	28.85'	NA		
	Feb-02	36.2'	36.39'	37.39'	26.44'	30.32'	29.21'		
	Jun-02	37.92'	38.75'	39.19'	26.46'	NA	30.07'	30.91'	30.98'
	Oct-02	42.45'	43.66'	44.66'	26.48'	30.28'	34.11'	32.68'	34.70'
Screened Interval (bg)		40'-60'	30'-50'	29'-49'	17'-27'	20'-30'	34'-55'	30.5'-40.5'	30.5'-45.5'
DTW= Depth to Water.									
NA= Not Analyzed.									
NS-FP= Not Sampled Free Product present.									
NS-NW= Not Sampled Not Enough Water present.									
				Blue= Chemicals stored on-site.					
				Red= Transformation compounds.					

Table 3: Dissolved Metal Sample Results (mg/L)

<u>Dissolved Metals</u>	<u>EPA Method</u>	<u>Date</u>	<u>MW-1</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>	<u>MW-6</u>	<u>MW-7</u>	<u>MW-8</u>	<u>MW-9</u>	<u>MCLs</u>
Antimony	7040	Oct-01	<0.5	<0.5	<0.5	NS-FP	NS-FP	<0.5			0.006
		Feb-02	<0.1	<0.1	<0.1	NS-FP	NS-FP	<0.1			
		Jun-02	<0.005	<0.005	<0.005	NS-FP	NS-FP	<0.005	NS-FP	<0.005	
		Oct-02	<0.005	<0.005	<0.005	NS-FP	NS-FP	<0.005	NS-FP	<0.005	
Arsenic	7060	Oct-01	0.026	0.061	<0.005	NS-FP	NS-FP	0.071			0.05
		Feb-02	0.068	0.044	0.006	NS-FP	NS-FP	0.113			
		Jun-02	0.064	0.046	<0.005	NS-FP	NS-FP	0.145	NS-FP	<0.005	
		Oct-02	0.015	0.038	<0.005	NS-FP	NS-FP	0.078	NS-FP	<0.005	
Barium	7080	Oct-01	<0.5	<0.5	<0.5	NS-FP	NS-FP	<0.5			1
		Feb-02	<0.005	<0.005	<0.005	NS-FP	NS-FP	<0.005			
		Jun-02	0.8	0.88	0.51	NS-FP	NS-FP	0.68	NS-FP	0.66	
		Oct-02	0.984	0.962	0.91	NS-FP	NS-FP	0.897	NS-FP	0.683	
Beryllium	7090	Oct-01	<0.05	<0.05	<0.05	NS-FP	NS-FP	<0.05			0.004
		Feb-02	<0.005	<0.005	<0.005	NS-FP	NS-FP	<0.005			
		Jun-02	<0.002	<0.002	<0.002	NS-FP	NS-FP	<0.002	NS-FP	<0.002	
		Oct-02	<0.002	<0.002	<0.002	NS-FP	NS-FP	<0.002	NS-FP	<0.002	
Cadmium	7130	Oct-01	<0.05	<0.05	<0.05	NS-FP	NS-FP	<0.05			0.005
		Feb-02	<0.04	<0.04	<0.04	NS-FP	NS-FP	<0.04			
		Jun-02	<0.005	<0.005	<0.005	NS-FP	NS-FP	<0.005	NS-FP	<0.005	
		Oct-02	<0.005	<0.005	<0.005	NS-FP	NS-FP	<0.005	NS-FP	<0.005	
Chromium	7190	Oct-01	<0.1	<0.1	<0.1	NS-FP	NS-FP	<0.1			0.05
		Feb-02	<0.02	<0.02	<0.02	NS-FP	NS-FP	<0.02			
		Jun-02	0.015	0.016	0.016	NS-FP	NS-FP	0.017	NS-FP	0.019	
		Oct-02	0.0188	0.0185	0.02	NS-FP	NS-FP	0.021	NS-FP	0.024	
Cobalt	7200	Oct-01	<0.1	0.12	<0.1	NS-FP	NS-FP	<0.1			None
		Feb-02	<0.04	<0.04	<0.04	NS-FP	NS-FP	<0.04			
		Jun-02	0.23	0.2	0.18	NS-FP	NS-FP	0.11	NS-FP	0.18	
		Oct-02	<0.1	<0.1	<0.1	NS-FP	NS-FP	<0.1	NS-FP	<0.1	

Table 3 (cont.): Dissolved Metal Sample Results (mg/L)

<u>Dissolved Metals</u>	<u>EPA Method</u>	<u>Date</u>	<u>MW-1</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>	<u>MW-6</u>	<u>MW-7</u>	<u>MW-8</u>	<u>MW-9</u>	<u>MCLs</u>
Copper	7210	Oct-01	<0.05	<0.05	<0.05	NS-FP	NS-FP	<0.05			1.3
		Feb-02	<0.005	<0.005	<0.005	NS-FP	NS-FP	<0.005			
		Jun-02	<0.1	<0.1	<0.1	NS-FP	NS-FP	<0.1	NS-FP	<0.1	
		Oct-02	<0.1	<0.1	<0.1	NS-FP	NS-FP	<0.1	NS-FP	<0.1	
Lead	7240	Oct-01	<0.1	<0.1	<0.1	NS-FP	NS-FP	<0.1			0.05
		Feb-02	<0.002	<0.002	<0.002	NS-FP	NS-FP	<0.002			
		Jun-02	<0.005	<0.005	<0.005	NS-FP	NS-FP	<0.005	NS-FP	<0.005	
		Oct-02	<0.005	<0.005	<0.005	NS-FP	NS-FP	<0.005	NS-FP	<0.005	
Mercury	7471	Oct-01	<0.001	<0.001	<0.001	NS-FP	NS-FP	<0.001			0.002
		Feb-02	<0.001	<0.001	<0.001	NS-FP	NS-FP	<0.001			
		Jun-02	<0.001	<0.001	<0.001	NS-FP	NS-FP	<0.001	NS-FP	<0.001	
		Oct-02	<0.001	<0.001	<0.001	NS-FP	NS-FP	<0.001	NS-FP	<0.001	
Molybdenum	7480	Oct-01	<0.4	<0.4	<0.4	NS-FP	NS-FP	<0.4			0.035*
		Feb-02	<0.1	<0.1	<0.1	NS-FP	NS-FP	<0.1			
		Jun-02	<0.035	<0.035	<0.035	NS-FP	NS-FP	<0.035	NS-FP	<0.035	
		Oct-02	<0.035	<0.035	<0.035	NS-FP	NS-FP	<0.035	NS-FP	<0.035	
Nickel	7520	Oct-01	<0.1	<0.1	<0.1	NS-FP	NS-FP	<0.1			0.1
		Feb-02	<0.04	<0.04	<0.04	NS-FP	NS-FP	<0.04			
		Jun-02	0.14	0.17	0.2	NS-FP	NS-FP	0.21	NS-FP	0.18	
		Oct-02	<0.05	<0.05	<0.05	NS-FP	NS-FP	<0.05	NS-FP	<0.05	
Selenium	7740	Oct-01	<0.005	<0.005	<0.005	NS-FP	NS-FP	<0.005			0.05
		Feb-02	<0.005	<0.005	<0.005	NS-FP	NS-FP	<0.005			
		Jun-02	<0.005	<0.005	<0.005	NS-FP	NS-FP	<0.005	NS-FP	<0.005	
		Oct-02	<0.005	<0.005	<0.005	NS-FP	NS-FP	<0.005	NS-FP	<0.005	
Silver	7760	Oct-01	<0.05	<0.05	<0.05	NS-FP	NS-FP	<0.05			0.1
		Feb-02	<0.005	<0.005	<0.005	NS-FP	NS-FP	<0.005			
		Jun-02	<0.01	<0.01	<0.01	NS-FP	NS-FP	<0.01	NS-FP	<0.01	
		Oct-02	<0.01	<0.01	<0.01	NS-FP	NS-FP	<0.01	NS-FP	<0.01	

Table 3 (cont.): Dissolved Metal Sample Results (mg/L)

<u>Dissolved Metals</u>	<u>EPA Method</u>	<u>Date</u>	<u>MW-1</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>	<u>MW-6</u>	<u>MW-7</u>	<u>MW-8</u>	<u>MW-9</u>	<u>MCLs</u>
Thallium	7840	Oct-01	<0.2	<0.2	<0.2	NS-FP	NS-FP	<0.2			0.002
		Feb-02	<0.005	<0.005	<0.005	NS-FP	NS-FP	<0.005			
		Jun-02	<0.002	<0.002	<0.002	NS-FP	NS-FP	<0.002	NS-FP	<0.002	
		Oct-02	<0.002	<0.002	<0.002	NS-FP	NS-FP	<0.002	NS-FP	<0.002	
Vanadium	7910	Oct-01	<0.5	<0.5	<0.5	NS-FP	NS-FP	<0.5			0.06*
		Feb-02	0.03	0.05	0.16	NS-FP	NS-FP	0.14			
		Jun-02	<0.06	<0.06	<0.06	NS-FP	NS-FP	<0.06	NS-FP	<0.06	
		Oct-02	<0.06	<0.06	<0.06	NS-FP	NS-FP	<0.06	NS-FP	<0.06	
Zinc	7950	Oct-01	<0.05	<0.05	<0.05	NS-FP	NS-FP	<0.05			5
		Feb-02	<0.01	<0.01	<0.01	NS-FP	NS-FP	<0.01			
		Jun-02	0.07	0.04	0.05	NS-FP	NS-FP	0.04	NS-FP	0.23	
		Oct-02	<0.01	<0.01	<0.01	NS-FP	NS-FP	<0.01	NS-FP	<0.01	

NS-FP= Not Sampled Free Product present.

MCLs= Maximum Contaminant Levels.

* = Health Advisories.

ATTACHED

ANCHEM0077

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ANCHEM0078

WELL GAUGING DATA

Project # 021007-HG.1 Date 10/7/02 Client Stekdy Env. Inc.Site Angela's Chemical Company - 8915 Sorenson, Santa Fe Springs

Well ID	Well Size (in)	Specimen	Depth to Immiscible Liquid (ft)	Thickness of Immiscible Liquid (ft)	Volume of Immiscibles Removed (ml)	Depth to water (ft)	Depth to well bottom (ft)	Survey Point TOB or TOC
MW-1	4					42.45	6.42	TOC
MW-2	4	aka				43.66	5.195	
MW-3	4					44.66	5.72	
MW-4	4	aka	26.42	0.06	0.0	26.48	—	
MW-6	4	aka	28.89	0.39	0.0	30.28	30.28	*
MW-7	2	aka				34.11	5.80	
MW-8	4	aka	31.76	0.92	0.0	32.68	—	
MW-9	4					34.70	45.62	
THIN LAYER OF WATER AT BOTTOM OF WELL. < 0.01 feet								

WELL MONITORING DATA SHEET

Project #: 021007-HG-1	Client: Blakely Env. Inv.
Sampler: MG	Start Date: 10/7/02
Well I.D.: MW-1	Well Diameter: 2 3 (4) 6 8
Total Well Depth:	Depth to Water: 80% = 46.24
Before: 6142 After:	Before: 4245 After: 42.85
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

Sampling Method:

Bailer

Waterra

Disposable Bailer

Disposable Bailer

Peristaltic

Extraction Port

Middleburg

Extraction Pump

Dedicated Tubing

Electric Submersible

Other 2" Grinder

Other:

beg. purge @ 12/4 @ 1.0 gpm

12.4 (Gals.) X 3 = 37.1 Gals.
 Case Volume Specified Volume Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Drw	Observations
1226	76.3	6.73	2249	10	12	47.11	odor
1238	75.8	6.87	2114	8	24	48.19	odor (12.0 gpm)
1244	75.1	6.88	2098	8	37	52.00	odor

Did well dewater? Yes

No

Gallons actually evacuated: 37

Sampling Time: 1412

Sampling Date: 10/7/02

Sample I.D.: MW-1

Laboratory:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

* TRIP Disk: store bought negative water

Equipment Blank I.D.:

@

Time

Duplicate I.D.:

MW-5 @ 1412

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):

Pre-purge:

mg/L

Post-purge:

mg/L

ORP (if req'd):

Pre-purge:

mV

Post-purge:

mV

Blaine Tech Services, Inc. 1680 Rogers Ave., San Jose, CA 95112 (408) 573-0555

ANCHEM00080

FROM :

PHONE NO. :

Oct. 10 2002 09:10AM P1

WELL MONITORING DATA SHEET

Project #: 021007-HG-1	Client: Blakely Env. Inv.
Sampler: MG	Start Date: 10/7/02
Well I.D.: MW-2	Well Diameter: 2 3 ④ 6 8
Total Well Depth:	Depth to Water: 802 = 45.32
Before: 51.95 After:	Before: 43.66 After: 46.57 (Sampled at depth)
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

Sampling Method:

Bailer

Bailer

Waterra

Disposable Bailer

Disposable Bailer

Peristaltic

Extraction Port

Middleburg

Extraction Pump

Dedicated Tubing

Electric Submersible

Other 2" govt

Other:

begin purge @ 1050 @ 1.0 gpm

5.4 (Gals.) X 3 = 16.2 Gals.

1 Case Volume Specified Volume Calculated Volume

Well Diameter	Multipier	Well Diameter	Multipier
1"	0.04	4"	0.63
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	DTW	Observations
1055	75.4	6.89	2010	73	5	42.68	odor
1100	Well	Deaerated	@ 8	gallons	10	mg	DTW = 50.17
(begin purge 1305 @ 0.5 gpm)							
1309	72.5	6.71	1984	54	10	46.92	odor
1523	78.4	6.72	1996	23	17	48.11	odor

Did well dewater? Yes No Gallons actually evacuated: 8

Sampling Time: 1449 Sampling Date: 10/7/02

Sample I.D.: MW-2 Laboratory:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd): Pre-purge: mg/L Post-purge: mg/L

ORP (if req'd): Pre-purge: mV Post-purge: mV

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ANCHEM0081

WELL MONITORING DATA SHEET

Project #: 021007-RG-1	Client: Blakely Env. Inv.
Sampler: MG	Start Date: 10/7/02
Well ID.: MW-3	Well Diameter: 2 3 (4) 6 8
Total Well Depth:	Depth to Water: 80% = 46.07
Before: 57.72 After:	Before: 44.66 After: 45.91
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

Bailer
Disposable Bailer
Middleburg
Electric Submersible

Water
Peristaltic
Extraction Pump
Other 2" Grinder

Sampling Method:

Bailer
(Disposable Bailer)
Extraction Port
Dedicated Tubing
Other:

begin purge @ 1122 @ 60 gpm
4.6 (Gals.) X 3 = 13.8 Gals.
1 Case Volume Specified Volume Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.63
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	OTW	Observations
1127	76.8	7.08	1912	17	5	48.90	odor, (40.5 gpm)
1137	77.9	6.93	1951	14	10	49.23	odor, (40.25 gpm)
1153	80.3	6.91	1966	9	14	50.50	odor

Did well dewater? Yes

(No)

Gallons actually evacuated: 14

Sampling Time: 1402

Sampling Date: 10/7/02

Sample I.D.: MW-3

Laboratory:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Yes Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

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FROM :

PHONE NO. :

Oct. 16 2002 09:11AM P3

WELL MONITORING DATA SHEET

Project #: 021007-HG.1	Client: Blakely Env. Inv.
Sampler: MG	Start Date: 10/7/02
Well ID.: MW.4	Well Diameter: 2 3 4 6 8
Total Well Depth: _____	Depth to Water: 26.48
Before: _____ After: _____	Before: _____ After: _____
Depth to Free Product: 26.42	Thickness of Free Product (feet): 0.06
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

Bailor
 Disposable Bailor
 Middleburg
 Electric Submersible

Waterra
 Peristaltic
 Extraction Pump
 Other _____

Sampling Method:

Bailor
 Disposable Bailor
 Extraction Port
 Dedicated Tubing
 Other: _____

(Gals.) X _____ = _____ Gals.
1 Case Volume Specified Volume Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² = 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
						- SPH detected w/ interphase pulse -
						- None bail -
						- No Sample Taken -

Did well dewater? Yes No	Gallons actually evacuated: _____
Sampling Time: _____	Sampling Date: 10/7/02
Sample I.D.: _____	Laboratory: _____
Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____	
Equipment Blank I.D.: _____ @ _____ Time	Duplicate I.D.: _____
Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____	
D.O. (if req'd): _____ Pre-purge: _____ mg/L	Post-purge: _____ mg/L
ORP (if req'd): _____ Pre-purge: _____ mV	Post-purge: _____ mV

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ANCHEM0083

WELL MONITORING DATA SHEET

Project #: 021007-HG-1	Client: Blakely Env. Inv.
Sampler: MG	Start Date: 10/7/02
Well I.D.: MW-6	Well Diameter: 2 3 (4) 6 8
Total Well Depth: /	Depth to Water: 30.28
Before: After:	Before: After:
Depth to Free Product: 29.89	Thickness of Free Product (feet): 0.39
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

Bailer

Disposable Bailer

Middleburg

Electric Submersible

Waterra

Peristaltic

Extraction Pump

Other

Sampling Method:

Bailer

Disposable Bailer MG

Extraction Port

Dedicated Tubing

Other:

(Gals.) X	=	Gals.
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.67
3"	0.37	Other	radius ² * 0.103

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
						- SPH detected w/ interface probe -
						- None bailed -
						- No Sample Taken -

Did well dewater? Yes No

Gallons actually evacuated:

Sampling Time:

Sampling Date: 10/7/02

Sample I.D.: MW-6

Laboratory:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):

Pre-purge:

mg/L

Post-purge:

mg/L

ORP (if req'd):

Pre-purge:

mV

Post-purge:

mV

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WELL MONITORING DATA SHEET

Project #: 021007-HG-1	Client: Blakely Env. Inv.
Sampler: MG	Start Date: 10/7/02
Well I.D.: MW-7	Well Diameter: (2) 3 4 6 8
Total Well Depth:	Depth to Water: 80% = 32.65
Before: 57.80 After:	Before: 34.11 After: 34.37
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

Bailer

Disposable Bailer

Middleburg

Electric Submersible

Waterra

Peristaltic

Extraction Pump

Other 2" Grundfos

Sampling Method:

Bailer

Disposable Bailer

Extraction Port

Dedicated Tubing

Other:

begin purge @ 0952 @ 1.0 gpm

2.8 (Gals.) X 3 = 8.5 Gals.
 Case Volume Specified Volume Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.161

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	WT	Observations
0955	75.2	6.56	2926	126	3	42.7	strong odor
0958	75.1	6.59	2851	55	6	45.96	odor
1001	74.8	6.60	2851	171	9	47.20	odor, black

Did well dewater? Yes (No) Gallons actually evacuated: 9

Sampling Time: 1340 Sampling Date: 10/7/02

Sample I.D.: MW-7 Laboratory:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

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WELL MONITORING DATA SHEET

Project #: 02007-HG-1	Client: Dakota Env. Serv.
Sampler: MG	Start Date: 10/7/02
Well I.D.: MW-8	Well Diameter: 2 3 (4) 6 8
Total Well Depth: —	Depth to Water: 32.68
Before: After:	Before: After:
Depth to Free Product: 31.76	Thickness of Free Product (feet): 0.92
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

Bailer
Disposable Bailer
Middleburg
Electric Submersible

Waterra
Peristaltic
Extraction Pump
Other

Sampling Method:

Bailer

Disposable Bailer

Extraction Port

Dedicated Tubing

Other:

(Gals.) X	=	Gals.
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multplier	Well Diameter	Multplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
						- SPH detected w/ interphase note -
						- None bailed -
						- Grab 1 sample -

Did well dewater? Yes <input checked="" type="radio"/> No <input type="radio"/>	Gallons actually evacuated: 2
Sampling Time: 1500	Sampling Date: 10/7/02
Sample I.D.: MW-8	Laboratory:
Analyzed for: TPH-G BTEX MTBE TPH-D Other:	
Equipment Blank I.D.: @ Time	Duplicate I.D.:
Analyzed for: TPH-G BTEX MTBE TPH-D Other:	
D.O. (if req'd): Pre-purge: mg/L	Post-purge: mg/L
ORP (if req'd): Pre-purge: mV	Post-purge: mV

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WELL MONITORING DATA SHEET

Project #: 021007-HG1	Client: Blakely Env. Inv.
Sampler: MG	Start Date: 10/7/02
Well I.D.: MW-9	Well Diameter: 2 3 (4) 6 8
Total Well Depth:	Depth to Water: 80% = 36.58
Before: 45.62 After:	Before: 3470 After: 3500
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

Bailer
Disposable Bailer
Middleburg
Electric Submersible

Water
Peristaltic
Extraction Pump
Other 2" Grinder

Sampling Method:

Bailer
Disposable Bailer
Extraction Port
Dedicated Tubing
Other:

begin purge @ 1020 @ 2.0 gpm

7.1 (Gals.) X 3 = 21.3 Gals.
1 Case Volume Specified Volume Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.63
2"	0.16	6"	1.47
3"	0.37	Other	radius ² = 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	DTW	Observations
1023	73.2	6.79	2307	24	7	38.04	clean
1027	73.3	6.79	2293	14	14	41.71	clean
1030	73.3	6.84	2296	11	22	42.48	clean

Did well dewater? Yes (No) Gallons actually evacuated: 22

Sampling Time: 1348 Sampling Date: 10/7/02

Sample I.D.: MW-9 Laboratory:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

Blaine Tech Services, Inc. 1680 Rogers Ave., San Jose, CA 95112 (408) 573-0555

ANCHEM0087

B

ANCHEM0088



Southland Technical Services, Inc.
Environmental Laboratories

10-21-2002

Mr. Hiram Garcia
Blakely Environmental Investigations, Inc.
9605 Arrow Highway, Suite T
Rancho Cucamonga, CA 91730

Project: Angeles Chemical Co.
Project Site: 8915 Sorensen Ave., Santa Fe Springs, CA
Sample Date: 10-07-2002
Lab Job No.: BL210034

Dear Mr. Garcia:

Enclosed please find the analytical report for the sample(s) received by STS Environmental Laboratories on 10-07-2002 and analyzed for the following parameters:

EPA 8021B (BTEX, MTBE)/8015M (Gasoline)
EPA 8260B (VOC's by GC/MS)
EPA 314 (Perchlorate by Ion Chromatography)

EPA 314 analysis was subcontracted to Associated Laboratories. Their original report is attached.

The sample(s) arrived in good conditions (i.e., chilled, intact) and with a chain of custody record attached.

STS Environmental Laboratory is certified by CA DHS (Certificate Number 1986). Thank you for giving us the opportunity to serve you. Please feel free to call me at (323) 888-0728 if our laboratory can be of further service to you.

Sincerely,

Roger Wang, Ph. D.
Laboratory Director

Enclosures

This cover letter is an integral part of this analytical report.

ANCHEM0089



Southland Technical Services, Inc.
Environmental Laboratories

10-21-2002

Client: Blakely Environmental Investigations, Inc.
Project: Angeles Chemical Co.
Project Site: 8915 Sorensen Ave., Santa Fe Springs, CA
Matrix: Water
Batch No.: AJ09-GW1

Lab Job No.: BL210034
Date Sampled: 10-07-2002
Date Received: 10-07-2002
Date Analyzed: 10-09-2002

EPA 8015M (Gasoline)
Reporting Units: µg/L (ppb)

Sample ID	Lab ID	Gasoline (C4-C12)	Method Detection Limit	PQL
Method Blank		ND	50	50
MW-1	BL210034-1	52,300	50	1,000
MW-2	BL210034-2	7,370	50	500
MW-3	BL210034-3	29,900	50	500
MW-7	BL210034-5	5,300	50	500
MW-9	BL210034-6	1,730	50	50
TB	BL210034-7	ND	50	50

ND: Not Detected (at the specified limit)

PQL: Practical Quantitation Limit.

ANCHEM0090



Southland Technical Services, Inc.
Environmental Laboratories

10-21-2002

Client: Blakely Environmental Investigations, Inc.
Project: Angeles Chemical Co.
Project Site: 8915 Sorensen Ave., Santa Fe Springs, CA
Matrix: Water
Batch No.: 1009-M1

Lab Job No.: BL210034
Date Sampled: 10-07-2002
Date Received: 10-07-2002
Date Analyzed: 10-09-2002

EPA 7000 Series for CAM Metals (TTL)

Reporting Units: mg/L (ppm)

Element	EPA Method	Method Blank	MW-1	MW-2	MW-3	MDL	PQL
			BL210034-1	BL210034-2	BL210034-3		
Antimony (Sb)	7040	ND	ND	ND	ND	0.005	0.005
Arsenic (As)	7060	ND	0.015	0.038	ND	0.005	0.005
Barium (Ba)	7080	ND	0.984	0.962	0.910	0.20	0.20
Beryllium (Be)	7090	ND	ND	ND	ND	0.002	0.002
Cadmium (Cd)	7130	ND	ND	ND	ND	0.005	0.005
Chromium (Cr)	7190	ND	0.0188	0.0185	0.020	0.01	0.01
Cobalt (Co)	7200	ND	ND	ND	ND	0.10	0.10
Copper (Cu)	7210	ND	ND	ND	ND	0.10	0.10
Lead (Pb)	7420	ND	ND	ND	ND	0.005	0.005
Mercury (Hg)	7471	ND	ND	ND	ND	0.001	0.001
Molybdenum (Mo)	7481	ND	ND	ND	ND	0.035	0.035
Nickel (Ni)	7520	ND	ND	ND	ND	0.05	0.05
Selenium (Se)	7740	ND	ND	ND	ND	0.005	0.005
Silver (Ag)	7760	ND	ND	ND	ND	0.01	0.01
Thallium (Tl)	7840	ND	ND	ND	ND	0.002	0.002
Vanadium (V)	7911	ND	ND	ND	ND	0.060	0.060
Zinc (Zn)	7950	ND	ND	ND	ND	0.01	0.01

ND: Not Detected (at the specified limit).

MDL: Method Detection Limit.

PQL: Practical Quantitation Limit.

ANCHEM0091



Southland Technical Services, Inc.
Environmental Laboratories

10-21-2002

Client: Blakely Environmental Investigations, Inc.
Project: Angeles Chemical Co.
Project Site: 8915 Sorensen Ave., Santa Fe Springs, CA
Matrix: Water
Batch No.: 1009-M1

Lab Job No.: BL210034
Date Sampled: 10-07-2002
Date Received: 10-07-2002
Date Analyzed: 10-09-2002

EPA 7000 Series for CAM Metals (TTLC)
Reporting Units: mg/L (ppm)

Element	EPA Method	Method Blank	MW-7	MW-9	MDL	PQL
			BL210034-5	BL210034-6		
Antimony (Sb)	7040	ND	ND	ND	0.005	0.005
Arsenic (As)	7060	ND	0.078	ND	0.005	0.005
Barium (Ba)	7080	ND	0.897	0.683	0.20	0.20
Beryllium (Be)	7090	ND	ND	ND	0.002	0.002
Cadmium (Cd)	7131	ND	ND	ND	0.005	0.005
Chromium (Cr)	7190	ND	0.021	0.024	0.01	0.01
Cobalt (Co)	7200	ND	ND	ND	0.10	0.10
Copper (Cu)	7210	ND	ND	ND	0.10	0.10
Lead (Pb)	7420	ND	ND	ND	0.005	0.005
Mercury (Hg)	7471	ND	ND	ND	0.001	0.001
Molybdenum (Mo)	7481	ND	ND	ND	0.035	0.035
Nickel (Ni)	7520	ND	ND	ND	0.05	0.05
Selenium (Se)	7740	ND	ND	ND	0.005	0.005
Silver (Ag)	7760	ND	ND	ND	0.01	0.01
Thallium (Tl)	7840	ND	ND	ND	0.002	0.002
Vanadium (V)	7911	ND	ND	ND	0.060	0.060
Zinc (Zn)	7950	ND	ND	ND	0.01	0.01

ND: Not Detected (at the specified limit).
MDL: Method Detection Limit.
PQL: Practical Quantitation Limit.

ANCHEM0092



Southland Technical Services, Inc.

Environmental Laboratories

Client: Blakely Environmental Investigations, Inc.
Project: Angeles Chemical Co.

Lab Job No.: BL210034
Matrix: Water

Date Reported: 10-21-2002
Date Sampled: 10-07-2002

EPA 8260B (VOCs by GC/MS, Page 1 of 2) Reporting Unit: ppb

DATE ANALYZED	10-10	10-10-02	10-10-02	10-10-02	10-10-02	10-10-02	10-10-02	10-10-02
DILUTION FACTOR		100	10	10	10	50	50	5
LAB SAMPLE LD.		BL210034-1	BL210034-2	BL210034-3	BL210034-4	BL210034-5	BL210034-6	
CLIENT SAMPLE LD.		MW-1	MW-2	MW-3	MW-5	MW-7	MW-9	
COMPOUND	MDL	PQL	MB					
Dichlorodifluoromethane	5	5	ND	ND	ND	ND	ND	ND
Chloromethane	5	5	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	2	ND	2,860	2,710	12,200	2,260	684
Bromomethane	5	5	ND	ND	ND	ND	ND	ND
Chloroethane	5	5	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	5	5	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	5	ND	3,800	2,100	176	3,460	547
Iodomethane	5	5	ND	ND	ND	ND	ND	ND
Methylene Chloride	5	5	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	5	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	5	ND	10,400	2,550	1,130	9,740	5,680
2,2-Dichloropropane	5	5	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5	5	ND	20,700	10,400	212	19,700	311
Bromochloromethane	5	5	ND	ND	ND	ND	ND	ND
Chloroform	5	5	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	5	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	5	ND	ND	ND	ND	ND	92.0
Carbon tetrachloride	5	5	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	5	5	ND	ND	ND	ND	ND	ND
Benzene	1	1	ND	245	177	99.2	ND	121
Trichloroethene	2	2	ND	ND	ND	28.0	ND	ND
1,2-Dichloropropane	5	5	ND	ND	ND	ND	ND	ND
Bromodichloromethane	5	5	ND	ND	ND	ND	ND	ND
Dibromomethane	5	5	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	5	5	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	5	5	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	5	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	5	5	ND	ND	ND	ND	ND	ND
Dibromochloromethane	5	5	ND	ND	ND	ND	ND	ND
2-Chloroethylvinyl ether	5	5	ND	ND	ND	ND	ND	ND
Bromoform	5	5	ND	ND	ND	ND	ND	ND
Isopropylbenzene	5	5	ND	ND	ND	ND	ND	ND
Bromobenzene	5	5	ND	ND	ND	ND	ND	ND

ANCHEM0093



Southland Technical Services, Inc.
Environmental Laboratories

Client: Blakely Environmental Investigations, Inc.
Project: Angeles Chemical Co.

Lab Job No.: BL210034
Matrix: Water

Date Reported: 10-21-2002
Date Sampled: 10-07-2002

EPA 8260B (VOCs by GC/MS, Page 2 of 2) Reporting Unit: (ppb)

COMPOUND	MDL	PQL	MB	MW-1	MW-2	MW-3	MW-5	MW-7	MW-9
Toluene	1	1	ND	5,390	39.3	4,810	5,060	2,360	ND
Tetrachloroethene	2	2	ND	ND	ND	39.3	ND	ND	190
1,2-Dibromoethane(EDB)	5	5	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	5	ND	ND	53.9	ND	ND	ND	ND
1,1,1,2-Tetrachloroethan	5	5	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1	1	ND	884	469	945	1,040	213	ND
Total Xylenes	1	1	ND	3,570	73.2	2,570	4,010	576	ND
Styrene	5	5	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethan	5	5	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	5	5	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	5	5	ND	ND	44.2	ND	ND	ND	ND
2-Chlorotoluene	5	5	ND	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	5	5	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	5	5	ND	574	67.8	57.8	700	ND	ND
tert-Butylbenzene	5	5	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	5	5	ND	2,120	116	299	2,510	327	ND
Sec-Butylbenzene	5	5	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	5	5	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	5	5	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5	5	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	5	5	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	5	5	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	5	5	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	5	5	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	5	5	ND	ND	ND	ND	ND	ND	ND
Naphthalene	5	5	ND	ND	62.2	59.2	265	ND	ND
1,2,3-Trichlorobenzene	5	5	ND	ND	ND	ND	ND	ND	ND
Acetone	25	25	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	25	25	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	25	25	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	25	25	ND	ND	ND	1,410	ND	276	ND
2-Hexanone	25	25	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	25	25	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	50	100	ND	ND	ND	1,090	ND	27,200	6,290
MTBE	2	2	ND	ND	ND	ND	ND	ND	ND
ETBE	2	2	ND	ND	ND	ND	ND	ND	ND
DIPE	2	2	ND	ND	ND	ND	ND	ND	ND
TAME	2	2	ND	ND	ND	ND	ND	ND	ND
t-Butyl Alcohol	10	10	ND	ND	ND	ND	ND	ND	ND

MDL=Method Detection Limit; MB=Method Blank; ND=Not Detected (below DF x MDL).

ANCHEM0094



Southland Technical Services, Inc.
Environmental Laboratories

Client: Blakely Environmental Investigations, Inc.
Project: Angeles Chemical Co.
Project Site: 8915 Sorensen Ave., Santa Fe Springs, CA
Matrix: Water
Batch No: 1010-VOAW

Lab Job No.: BL210034
Date Sampled: 10-07-2002
Date Received: 10-07-2002
Date Analyzed: 10-10-2002
Date Reported: 10-21-2002

EPA 8260B
(Tentatively Identified Compounds by Library Search)
Reporting Units: ug/kg (ppb)

Sample ID	Lab ID	DF	Halogenated TICs	Non-halogenated TICs	C4-C12 Volatile Petroleum Hydrocarbons
Estimated Quantitation Limit		1	5	20	10
Method Blank		1	ND	ND	ND
MW-1	BL210034-1	100	Trichlorocyclopentene= 1,000	ND	See gasoline amount
MW-2	BL210034-2	10	1,2-dichloro-112trifluor ethane=144	ND	See gasoline amount
MW-3	BL210034-3	10	ND	ND	See gasoline amount
MW-5	BL210034-4	50	ND	ND	14,600
MW-7	BL210034-5	50	ND	ND	See gasoline amount
MW-9	BL210034-6	5	1,2-dichloro-112trifluor ethane=60	ND	See gasoline amount

ND: Not Detected (at the specified limit)

ANCHEM0095



Southland Technical Services, Inc.
Environmental Laboratories

10-21-2002

**EPA 8015M (TPH)
Batch QA/QC Report**

Client: Blakely Environmental Investigations, Inc.
Project: Angeles Chemical Co.
Matrix: Water
Batch No.: AJ09-GW1

Lab Job No.: BL210034
Lab Sample ID: G210048-3
Date Analyzed: 10-09-2002

I. MS/MSD Report
Unit: ppb

Analyte	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
TPH-g	ND	1000	1,160	1,120	116.0	112.0	3.5	30	70-130

II. LCS Result
Unit: ppb

Analyte	LCS Report Value	True Value	Rec.%	Accept. Limit
TPH-g	1,060	1,000	106.0	80-120

ND: Not Detected

ANCHEM0096



Southland Technical Services, Inc.
Environmental Laboratories

10-21-2002

**EPA 8260B
Batch QA/QC Report**

Client: Blakely Environmental Investigations, Inc.
Project: Angeles Chemical Co.
Matrix: Water
Batch No: 1010-VOAW

Lab Job No.: BL210034
Sample ID: R210051-1
Date Analyzed: 10-10-2002

**I. MS/MSD Report
Unit: ppb**

Compound	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
1,1-Dichloroethene	ND	20	22.0	21.7	110.0	108.5	1.4	30	70-130
Benzene	ND	20	20.8	20.2	104.0	101.0	2.9	30	70-130
Trichloro-ethene	ND	20	21.3	21.1	106.5	105.5	0.9	30	70-130
Toluene	ND	20	19.9	20.3	99.5	101.5	2.0	30	70-130
Chlorobenzene	ND	20	22.3	22.7	111.5	113.5	1.8	30	70-130

**II. LCS Result
Unit: ppb**

Analyte	LCS Value	True Value	Rec.%	Accept. Limit
1,1-Dichloroethene	20.6	20.0	103.0	80-120
Benzene	20.5	20.0	102.5	80-120
Trichloro-ethene	22.0	20.0	110.0	80-120
Toluene	20.9	20.0	104.5	80-120
Chlorobenzene	22.9	20.0	114.5	80-120

ND: Not Detected.

ANCHEM0097

SOUTHLAND TECHNICAL SERVICES, INC.

Page 1 of 1

CHAIN OF CUSTODY RECORD

Lab Job Number BL210034

Client: BEII						Analyses Requested										T.A.T. Requested <input type="checkbox"/> Rush 8 12 24 hours <input type="checkbox"/> 2-3 days <input checked="" type="checkbox"/> Normal											
Address: 9605 Arrow Route, Suite T																Sample Condition <input checked="" type="checkbox"/> Chilled <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Sample seals											
Report Attention		Phone: 909/989-9550		Fax: 909/989-9556		Sampled by												Remarks									
Project Name/No.		Project Site		Project Site																							
Client Sample ID		Lab Sample ID		Sample Collect		Matrix Type		Sample Preserve		No., type* & size of container		602/8021 (BTEX, MTBE)		8015M (Gasoline)		8015M (Diesel)		8260B (VOCs)		8260B (Oxygenates, BTEX)		8260B (MTBE Confirm.)		Metals		Perchlorates	
				Date		Time																					
MW-1		BL210034-1		10/7/02				Water		2-VoAs 2-500mL P		X		X		X		X		X		X		X		X	
MW-2		-2		11				H		H		X		X		X		X		X		X		X		X	
MW-3		-3		11				H		H		X		X		X		X		X		X		X		X	
MW-5		-4		11				H		2-VoAs 2-500mL P		X		X		X		X		X		X		X		X	
MW-7		-5		11				H		H		X		X		X		X		X		X		X		X	
MW-9		-6		11				H		H		X		X		X		X		X		X		X		X	
MW-8		-8		11				H		1-500mL P		X		X		X		X		X		X		X		X	
Trip Blank		-7		11				H		2-VoAs		X		X		X		X		X		X		X		X	
ANCHEN009B																											
Relinquished by: <i>[Signature]</i>		Company: BEII		Date: 10/7/02		Time: 3:46		Received by: <i>[Signature]</i>		Company: STS		Container types: M=Metal Tube A=Air Bag P=Plastic bottle G=Glass bottle V=VOA vial															
Relinquished by:		Company:		Date:		Time:		Received by:		Company:																	

Southland Tech. Services, Inc.
7801 Telegraph Road, Suite L & K
Orange, CA 92668

Tel: (323) 888-0728
Fax: (323) 888-1509

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.
Distribution: WHITE with report, PINK to courier.

**ASSOCIATED LABORATORIES****806 North Batavia - Orange, California 92868 - 714/771-6900****FAX 714/538-1209**

CLIENT Southland Technical Services
ATTN: Ellis Hsue
7801 Telegraph Rd.- Suite L
Montebello, CA 90640

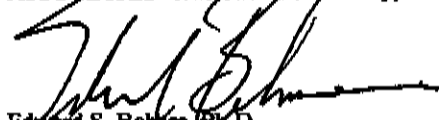
(6304)**LAB REQUEST 100406****REPORTED 10/15/2002****RECEIVED 10/08/2002****SUBMITTER Client****COMMENTS**

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

<u>Order No.</u>	<u>Client Sample Identification</u>
384268	MW-1
384269	MW-2
384270	MW-3
384271	MW-7
384272	MW-9
384273	MW-8
384274	Laboratory Method Blank

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,


Edward S. Behar, Ph.D.
Vice President

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

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TESTING & CONSULTING
Chemical
Microbiological
Environmental

ANCHEM0099

Order #: 384268

Client Sample ID: MW-1

Matrix: WATER

Date Sampled: 10/07/2002

Analyte

Result

DLR

Units

Date/Analyst

314 Perchlorate by Ion Chromatography

Perchlorate

ND

4

ug/L

10/11/02

BGS

Order #: 384269

Client Sample ID: MW-2

Matrix: WATER

Date Sampled: 10/07/2002

Analyte

Result

DLR

Units

Date/Analyst

314 Perchlorate by Ion Chromatography

Perchlorate

ND

4

ug/L

10/11/02

BGS

Order #: 384270

Client Sample ID: MW-3

Matrix: WATER

Date Sampled: 10/07/2002

Analyte

Result

DLR

Units

Date/Analyst

314 Perchlorate by Ion Chromatography

Perchlorate

ND

4

ug/L

10/11/02

BGS

Order #: 384271

Client Sample ID: MW-7

Matrix: WATER

Date Sampled: 10/07/2002

Analyte

Result

DLR

Units

Date/Analyst

314 Perchlorate by Ion Chromatography

Perchlorate

ND

4

ug/L

10/11/02

BGS

ANCHEM0100

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit

ASSOCIATED LABORATORIES

Analytical Results Report

Lab Request 100406 results, page 1 of 2



Order #: 384272

Client Sample ID: MW-9

Matrix: WATER

Date Sampled: 10/07/2002

Analyte

Result

DLR

Units

Date/Analyst

314 Perchlorate by Ion Chromatography

Perchlorate

ND

4

ug/L

10/11/02

BGS

Order #: 384273

Client Sample ID: MW-8

Matrix: WATER

Date Sampled: 10/07/2002

Analyte

Result

DLR

Units

Date/Analyst

314 Perchlorate by Ion Chromatography

Perchlorate

ND

4

ug/L

10/11/02

BGS

Order #: 384274

Client Sample ID: Laboratory Method Blank

Matrix: WATER

Date Sampled: 10/07/2002

Analyte

Result

DLR

Units

Date/Analyst

314 Perchlorate by Ion Chromatography

Perchlorate

ND

4

ug/L

10/11/02

BGS

ANCHEM0101

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit

ASSOCIATED LABORATORIES

Analytical Results Report

Lab Request 100406 results, page 2 of 2



ASSOCIATED LABORATORIES

QA REPORT FORM

QC Sample : LR 100406-384269

Matrix: WATER

Prep.Date: 10/11/02

Analysis Date: 10/11/02

Lab ID#'s in Batch: LR 100406

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT

REPORTING UNITS = ug/L

Test	Method	Sample Result	Spike Added	Matrix Spike	Matrix Spike Dup	%Rec MS	%Rec MSD	RPD
ClO4	314.0	ND	50.0	47.4	46.9	95	94	1.1

RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Dup

%REC-MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate

%Recovery Limits: 80 - 120 %

%RPD Limit: 20 %

PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS

Test	Method	PREP BLK	LCS				
		Value	Result	True	%Rec	L.Limit	H.Limit
ClO4	314.0	ND	22.9	25	92	85%	115%

VALUE = Preparation Blank Value; ND = Not-Detected

LCS = Lab Control Sample Result

TRUE = True Value of LCS

L.LIMIT / H.LIMIT = LCS Control Limits

CHAIN OF CUSTODY RECORD

Lab Job Number

100406

Analyses Requested

☐ Rush 8 12 24 hours
☐ 2-3 days ☐ Normal

☐ Chilled ☐ Intact
☐ Sample seals

Remarks

[illegible]

Southland Tech. Services, Inc.
7801 Telegraph Road, Suite L & K
Montebello, CA 90640

Tel: (323) 888-0728
Fax: (323) 888-1509

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.
Distribution: WHITE with report, PINK to courier.